



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,773	09/03/1999	SILKE HEIN	MOBT:136	3052

7590 01/28/2003

Patrea L. Pabst  
Holland & Knight LLP  
Suite 2000, One Atlantic Center  
1201 WEST PEACHTREE STREET  
Atlanta, GA 30309-3400

EXAMINER

PAK, YONG D

ART UNIT	PAPER NUMBER
----------	--------------

1652

DATE MAILED: 01/28/2003

20

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application N .

09/380,773

Applicant(s)

HEIN ET AL.

Examiner

Yong Pak

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Prosecution Application***

The request filed on November 4, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/380,773 is acceptable and a CPA has been established. An action on the CPA follows.

Examiner notes that the after final amendment filed August 5, 2002 is still not entered. Applicants did not request entry of the unentered after final amendment filed August 5, 2002 (see CPA request transmittal). Therefore, the action that follows is based on claims prior to the unentered after final amendment.

Claims 38-61 are pending.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 38-42, 44-61 and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by Dennis et al.

Dennis et al. (U.S. Patent No. 6,117,658) teach a method of preparing poly(4-hydroxybutyric acid), poly(3-hydroxybutyric acid) and poly(3-hydroxybutyric acid-co-4-hydroxybutyric acid) using a cell expressing an *Alcaligenes eutrophus* phaC

Art Unit: 1652

polyhydroxyalkanoic acid synthase gene and a *Clostridium kluyveri* orfZ 4-hydroxybutyric acid acyl-coenzyme A transferase gene (Figure 1, Column 6, line 4 through Column 7 line 18 and Column 8, line 63 through Column 9, line 39). Dennis et al. also teach that the *Clostridium kluyveri* orfZ 4-hydroxybutyric acid acyl-coenzyme A transferase gene is one of the genes of the succinyl-CoA metabolic pathway and can be used in conjunction with the other gene (Column 9, lines 20-39).

Regarding claims 39-42, Dennis et al. also teach a method for preparing a polyester with a plant cell and a bacterial cell, *Escherichia coli*, transformed with the said synthase and transferase gene (Column 18, line 1 through Column 23, line 6). Dennis et al.

Regarding claims 49-51, Dennis et al. teach a method of producing a polyester with glucose, 1,4-butanediol, 4-hydroxybutyric acid and molecular oxygen in the culture medium (Column 10, lines 11-25 and Column 11, lines 1 through 43). Dennis et al. do teach a cell that is capable of producing the recited proteins and a culture medium that contains molecular oxygen.

Regarding claims 52-56, Dennis et al. also teach a method of preparing a polyester with a cell producing a succinyl-coenzyme A:coenzyme A transferase protein, a succinate-semialdehyde dehydrogenase, and a 4-hydroxybutyrate dehydrogenase, a succinate-semialdehyde dehydrogenase.

Regarding claim 64, Dennis et al. teach a method for separating the polyester from the cells (Column 24, lines 50-62).

Therefore, the teachings of Dennis et al. anticipate claims 38-42, 44-61 and 64.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38-39 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dennis et al. in view of Greener et al.

Dennis et al. teach a method of preparing a polyester with an *Escherichia coli* cell producing a polyhydroxyalkanoic acid synthase protein and a fatty acid-acyl-coenzyme A transferase protein, as discussed above.

The difference between the reference of Dennis et al. and the instant invention is that the reference of Dennis et al. does not teach a method using an *E. coli* strain XL1-Blue.

Greener (U.S. Patent No. 5,512,468) teach that *E. coli* strain XL1-Blue cells have high transformation efficiencies (Column 8, line 62 through Column 10, line 62).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to prepare polyesters using a XL1-Blue cell producing the polyhydroxyalkanoic acid synthase protein and a fatty acid-acyl-coenzyme A transferase. XL1-Blue cells have high transformation efficiency, resulting in an increased production of enzymes. One of ordinary skill in the art would have had a

Art Unit: 1652

reasonable expectation of success since transforming XL1-Blue cells is routinely performed in the art.

No claims are allowed.

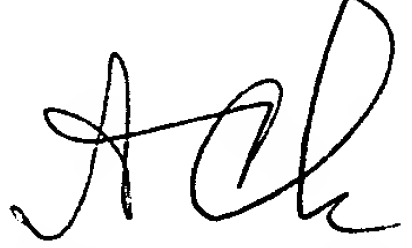
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Pak whose telephone number is 703-308-9363. The examiner can normally be reached on 8:00 A.M. to 4:30 P.M weekdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on 703-308-3804. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Yong Pak  
Patent Examiner

January 24, 2003



PONNATHAPU ACHUTAMURTHY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER